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large ascending nearly sessile calyx-lobes; cavity broad and deep; flesh thick, yellow, very sweet; seeds usually 5, 6–8<sup>mm</sup> long, grooved on the back, the lateral faces nearly plane.

The species above proposed is related to *C. mollis*, from which it is separated by the different outline of the leaf, with its very sharp serratures, more simple inflorescence, somewhat later period of flowering, and larger erect calyx-lobes. The fruit matures early in October and falls early.—W. W. ASHE, *Raleigh, N. C.*

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### BLACK ROT OF ORANGES.

A FUNGUS disease of navel oranges has attracted attention in the orange-growing districts of California for the past eight or ten years, and was named black rot by the writer on account of the color of the diseased tissues. The losses due to this disease will run from 3 to 10 per cent. of the navel crop, and as the cultivation of the navel variety in the state is extensive the total losses are proportionately heavy.

Oranges are attacked through the navel, the fungus hyphae entering cracks or other imperfections of the peel of those parts. The cells of the pulp sacks are destroyed, and soon become black in color and bitter to the taste. The peel is left uninjured until the disease has made considerable progress within, but finally becomes thin and darkened in color over the affected parts. The fungus vegetates freely among the pulp sacks, which are wholly destroyed as far as the mycelium extends, but this destruction of tissue rarely involves more than one-fourth of the fruit, and is commonly confined to the tissues lying near to and at one side of the navel. Infected fruit ripens prematurely, showing an exceptionally high color, and soon falls from the tree.

The fungus inducing this disease is a new species of *Alternaria*, and its conidia are produced upon the surface of the affected tissues. The life cycle has been studied by means of single spore cultures, and detailed descriptions and illustrations are reserved for publication, together with facts relative to preventive treatment. The following specific characterization may be accredited to Ellis and Pierce.

***Alternaria citri***, n. sp.—In oranges in California. Effused, olivaceous, becoming nearly black. Mycelium abundant, loosely interwoven, gray, consisting of slender, septate, yellowish or olivaceous-hyaline threads, penetrating and overrunning the matrix, much

branched, the branches mostly a little swollen at the apex and bearing the terminal variously shaped conidia, which are obovate, oblong-elliptical or subglobose at first,  $10-22 \times 8-15\mu$  diam., and mostly 3-septate, finally large,  $25-40 \times 15-25\mu$ , short-clavate-oblong, 4-6-septate and slightly constricted at the septa, the cells divided by one or more longitudinal septa, dark olive-brown. The conidia are oftener 3-6-catenulate in series, either simple or branched. As shown by cultures, secondary conidia often arise directly from the primary, thus giving rise to a secondary series. The cells of the conidia at maturity incline to assume a spherical shape, and the conidia then resemble somewhat asci filled with globose sporidia.

From its habitat (inside the orange) and the character of the conidia this seems distinct from *A. tenuis* Nees, on orange leaves.—  
NEWTON B. PIERCE, *U. S. Dept. Agric., Bureau of Plant Industry, Pacific Coast Laboratory, Santa Ana, California.*